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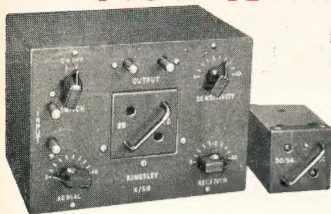


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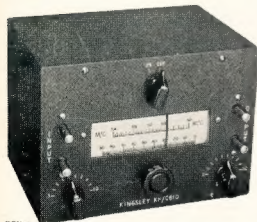
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EDITORIAL



For centuries men have shown their appreciation for the pioneers of science and the arts, by honouring those who have advanced the world in which they lived.

In the sphere of radio, it is comparatively simple to look back over the past forty years, during which time the growth of this branch of science has been so rapid that its development has occurred within the memory of one generation.

Apart from the pioneers we rightly honour as the inventors of specific radio devices, there are those real experimenters who have contributed in no small measure to the development and application of radio in the life of the ordinary citizen.

Many experimenters have used their knowledge in the commercial world, and have, by their organizing genius and technical ability, done much to advance the radio industry in times of war and peace.

Among such illustrious names are those of the late H. K. LOVE, VK3KU, and F. W. MEDHURST, VK7AH, who have shown, by their practical interest in the radio world, the true qualities of pioneers; and, as active amateurs, have contributed much to the fraternal atmosphere of the amateur movement.

By their deaths amateur radio has lost two of the finest amateurs, whose kindly natures and cheerful personalities will never be forgotten by their fellow amateurs.

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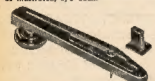
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Converting the TA12D for Amateur Use

BY J. C. DUNCAN*, VK3VZ

Are you one of those Hams who spend hours out in a cold shack, when you could be sitting alongside a warm fire, remote controlling the rig? If so the TA12D may be the answer to your problem, because this Transmitter can be band-switched and keyed from a remote position, and with the aid of a pre-amplifier, plate modulated to 100 watts input.

DESCRIPTION The Bendix TA12D is an aircraft transmitter built for low and medium frequencies, being the American counterpart of the English T1154/R1155.

The r.f. line-up consists of four separate v.f.o.'s, using 12SK7s, feeding an 807, which is a straight amplifier on the low frequency range (1200-1540 Kc.) and a doubler on three higher ranges. The v.f.o.'s and doubler tank condensers are ganged on Channels 2, 3 and 4. The doubler feeds two parallel 807s in the final, running at 525 volts, 210 Ma.

A motor-tuned bandswitch of seven sections selects the required v.f.o., doubler tank, and p.a. tank circuits; these circuits being pre-tuned to the required frequency. Parallel feed is used to the plates of both the doubler and final stages as can be seen from the simplified circuit diagram, Fig. 1.

The combined p.a. tank circuit and antenna tuning network is one not often met with in Amateur equipment, and will be recognised as a pie-network. A three position switch, located on the rear of each variable inductance, enables a fixed capacity to be switched in parallel with the variable capacity, or across the output of the network (the position shown in Fig. 1). In addition series capacitors, shunted by resistances, can be placed in series with the aerial if desired. The latter condensers and switches are located under the horizontal insulated panel alongside the antenna relay. As the whole antenna network was designed to match a wide range of antenna lengths, the output circuit can be considerably simplified where we are feeding resonant antennae.

The modulator unit used with these transmitters is particularly interesting to the Amateur, as it contains quite a few components of value even if the unit is scrapped for the parts.

The modulator is mounted with the motor-generator unit, and consists of an output stage of two tetrodes (807s) in push pull, driven by a penthode amplifier (6F6). The latter stage is preceded by an a.f. oscillator (6N7) for m.c.w. when required. A separate three-stage intercom. amplifier is used to drive the 6F6 for phone.

No alterations have been made to the modulator unit yet, but it seems that the 6N7 stage could be rewired into a

two-stage amplifier without much difficulty. The motor generator requires an input of 24 volts at 14.8 amps., the output being 540 volts at 450 Ma. Starting solenoid, fuses and filter circuits are also incorporated in this unit. The negative 540 volt pole is earthed via a 60 ohm tapped resistance to provide bias for the p.a. and modulators. The latter section will be replaced by a suitable a.c. supply in the writer's case. The outlet connections for the modulator-power supply unit, and r.f. section are as follows:—

Power Supply and Modulator.—

(1) +24 v., (2) —24 v., (3) Fil. out, (4) B+ in, (5) Fil. in, (6) Dyn. Relay, (7) B+ out, (8) Side Tone, (9) Audio to P.A. [Nos. 7 and 8 are secondary of Mod. Trans.], (10) M.C.W., (11) Bias to P.A.—24 v., (12) Microphone, (13) Emergency Microphone, (14) Mod. Relay, in Cathodes of 807s, (15) Blank, (16) Microphone, other end of primary winding to pin 12.

R.F. Unit Connections.—

(1) Fil., (2) Ground, (3) Channel 1, (4) Channel 2, (5) Channel 3, (6) Channel 4, (7) Motor, (8) Audio Modulation, (9) Antenna Loading Relay on Channel 1 only, (10) B+ in, (11) B+ out, (12) Dyn. Start, (13) Antenna Relay, (14) —24 volts bias to P.A., (15) and (16) no connection.

Connection between pin 7 and any one of pins 3, 4, 5 and 6 will cause the band-switching motor to rotate to the Channel selected. A separate bank on the bandswitch is used to accomplish this. D.C. for the motor and clutch

relay is obtained from the 24 volt Fil. (pin 1). The motor and clutch relay are connected in series across the 24 volts, and are each of 12 volt rating.

The Antenna Relay carries out a number of functions, which are as follows:—

- (1) Keys the plate voltage of the transmitter on c.w. and m.c.w.
- (2) Switches the antenna from transmitter to receiver antenna post, and grounds the receiver connection when the transmitter is on.
- (3) Pair of contacts energises the dynamotor starting relay.

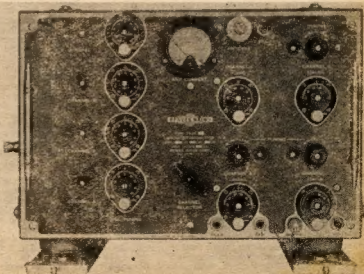
The antenna relay coil can be operated from the front panel of the transmitter by pressing button marked "Key." The bandswitching motor can be controlled from the transmitter by releasing the push button under the screwed cover, marked "Local."

The ranges of the TA12D are as follows:—

Channel 1—1200-1540 Kc.
2—2000-3400 Kc.
3—3,000-4,800 Kc.
4—4,300-7,000 Kc.

In the TA12C model, channel 3 covers 4,800-7,800 Kc., and channel 4 from 7,880 to 12,000 Kc.

The construction of the transmitter is exceedingly good, and very compact. The four v.f.o.'s are located in a cast aluminium box, and are arranged vertically down the left hand side of the front panel, the box being divided into four sections by aluminium partitions. The shafts ganging the oscillator and doubler condensers project from the side



*Technical Editor; 23 Parkside Avenue, Balwyn, Victoria.

of the box, with the doubler condensers and associated coils, mounted on the outside.

The remainder of the front panel is taken up by the r.f. meter, p.a. variable inductance, and loading condensers. A small sub-chassis running across the rear of the unit carries the 807 doubler and pair of 807s in the p.a., from left to right respectively, followed by the antenna relay, and loading panel at the extreme right.

The motor and bandswitch are located under this sub-chassis, and can be hand controlled by a right angle drive from the front panel.

MODIFICATIONS The first step is necessary alterations to the v.f.o.'s, and it is quite obvious that Channels 1 and 2 cannot be used, whilst Channel 3 will suit 3.5 to 3.9 Mc. without alteration. Channel 4 will only partly cover the 7 Mc. band, and to extend the range slightly, brass slugs were inserted in the v.f.o. and doubler coils, as will be described later.

The inspection cover is removed from the v.f.o.'s, and also the main end plate of the chassis. The power inlet plug which is secured to this plate is not removed, as it will be found that there is sufficient slack in the wiring to enable the plate to be swung around out of the way. Next the aluminium divisions between the v.f.o.'s are removed. Some of the screws may be hard to get at, but a pair of pliers will remove the few hard ones by the brute force method.

Referring to Fig. 1, all wiring in heavy black lines is new, and it can be seen that all wiring except the filaments of Channel 1 must be removed. The variometer was left in position, but could be removed if desired. Put the octagonal brass pillar aside, which supports the condenser strip, as this is required later for the slug of Channel 4.

Filaments.—Channels 1, 2, 3 and 4 are now rewired for 12 volt operation. In Channels 1 and 2 the 12SK7s are in series, as are also the tubes in Channels 3 and 4. The filament wires can be traced easily, as they run through the rubber grommets located under each partition, and connect to the 24 volt feed-thru insulator in Channel 4. Small insulated anchor lugs are placed under the screws holding the valve sockets on Channels 2 and 4, and the active 24 volt leads tied to these lugs on their way to the valve sockets. The common lead between the filaments of Channels 3 and 4 is now cut sufficiently far from Channel 4 valve socket, so that the wire coming from Channel 4 can be earthed to a convenient point, and the remaining wire from Channel 3 socket can be connected to the anchor point on Channel 4 socket. Channels 1 and 2 are then treated similarly.

The procedure may sound complicated, but is simpler to have the one side of the filament on each valve grounded and the other side connected to the 24 volt inlet on Channel 4 (which will now be supplied with 12 volts a.c.), and to alter the wiring without disturb-

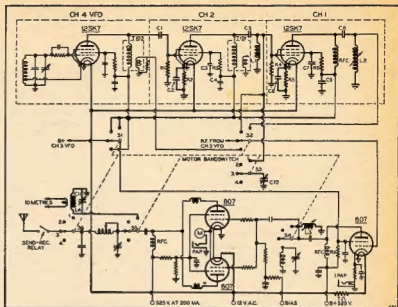


FIG 1

Rx—12,000 ohms, changed to 2,500 ohms 20 watt.

R1, R4—10,000 ohms, $\frac{1}{2}$ watt.

R2, R5—200 ohms, 1 watt.

R3, R8—50,000 ohms, $\frac{1}{2}$ watt.

C1, C5, C8—100 pF. mica.

C2, C3, C4, C6, C7, C9—0.01 uF. mica.

C10—3-30 pF. air trimmer.

C11—60 pF. double spaced variable.

R.F.C.—R.F. Choke reused from Channel 1.

L1— $\frac{1}{2}$ " diam. former, 30 turns, 26 s.w.g.

L2— $\frac{1}{2}$ " diam. former, 11 $\frac{1}{2}$ turns at 24 turns per inch.

L3— $\frac{1}{2}$ " diam. former, 4 $\frac{1}{2}$ turns, 22 s.w.g. at 14 turns per inch.

L4 (28 Mc. p.a.)—2 turns $\frac{1}{4}$ " diam., 14 s.w.g., 1" long.

ing the whole of the v.f.o. wiring in Channels 3 and 4, as would be necessary, if the existing wires were not reused.

The slug is now made for Channel 4 v.f.o., and the piece of brass rod, mentioned previously, is cut off $1\frac{1}{2}$ " from the screwed end. The corners are now rounded, until the slug will slip easily into the v.f.o. coil. The screw holding down the coil is removed and the brass slug is inserted in its place, the top of the slug being slotted to take a screwdriver. A similar length of rod, also rounded is slipped into the appropriate doubler coil on the outside of the box, and should be adjusted to give maximum drive to the p.a. When the correct point is found, the wax on the coil former is melted on the coil with a soldering iron, and when set will hold the slug securely in place. The reduction in the inductances by the addition of the brass slugs, is sufficient to reach 7.4 Mc. on Channel 4 v.f.o., thereby giving full coverage of the 40 metre band.

Channel 3 v.f.o. is unaltered, apart from the filaments as mentioned previously, so attention is now turned to Channel 2. This channel has to be altered from a v.f.o. to a doubler, and will be required to double from Channel 4 on 80 metres, to 40 metres. Remember that the 807 stage doubles to 40 metres from Channel 4 v.f.o. which is on 80 metres, when 40 metre

output is required. To make this clearer the table below is appended.

Channel	V.F.O. (Output)	807 Doubler	P.A. Output
3	160*	80*	80*
4	80	40	40
2	40	20	20
1	20	10	10

* Metres.

It can be seen from the table that when the bandswitch is in position 1, Channel 1 will be delivering 20 metres r.f. to the 807 doubler, which doubles to 10 metres.

Reverting to Channel 2. As can be seen from Fig. 1, a doubler circuit is used which requires the minimum of alterations in this stage, as the circuits of Channels 4, 3 and 2 are similar. The primary of T101 is used as an r.f. choke, and the secondary is unused. The v.f.o. inductance L1 is removed and rewound with 26 s.w.g., 30 turns, close wound. If it is desired to tune the doubler stage, the condenser which originally tuned the v.f.o. could be used. The turns on the coil would have to be reduced however. The doubler tank for the 807 stage, located on the outside of the box, must now be altered. To do this the aluminium cover enclosing the 807

tanks is removed, and the inductance on the back of Channel 2 removed and rewound with 15 turns of 20 s.w.g., close wound. The tank condenser being disconnected from this inductance. The object is to make the doubler tanks broadly resonant, and avoid additional tuning controls.

Channel 1 is now wired and in this case it is practically a rewire job, as this stage was variometer tuned previously, and not much can be reused, except one of the r.f. chokes. The inductance L2 was wound on a 1" polystyrene former and tuned with a brass slug, the turns and spacing being given in the coil table. There is no inductance for the 807 doubler on Channel 1, so it will be necessary to make one. This coil L3 in Fig. 1, is fixed under the rear sub-chassis of the transmitter, and connected to the vacant contact on the bandswitch bank, which switches the 807 doubler plate tanks. The coil data is given in the table to tune to 10 metres.

This completes the work to the v.f.o. section, but before replacing the end panel on the transmitter, some work has to be done to the 807 doubler socket. The first step is to change the 807s over to 12 volt operation. As originally wired the 24 volts comes from Pin 1 on the power socket, through the 7 ohm resistor nearby, thence through the 807 doubler, and two p.a. filaments in series. The wire running between the 807 doubler socket and one of the p.a. 807s is removed from the doubler socket and resoldered to the top end of the 7 ohm resistor. The filament pin on the 807

doubler socket, now vacated is connected to chassis. H.T. is now supplied to the two doublers when on Channels 4, 2 and 1 by connecting the appropriate contacts on the No. 2 bank of the bandswitch. To complete the alteration to the 24 volt d.c. circuit, it is necessary to remove the relay and motor wires which are connected to this circuit, and provide a separate inlet for their energisation.

With the aid of a continuity meter it will be found that a wire which is connected to the top of the 7 ohm resistor, connects to Channel 1 pin on the third bank of the bandswitch (reading from left to right, with the chassis inverted, rear view). The leads which connect to the antenna relay and motor also connect to this point. When the bandswitch is in Channel 1 position, the wiper on this bank supplies d.c. to pin No. 9 on the power inlet plug. This is to close a relay in the antenna unit loading coil, and remove a short on the coil when operation on the low frequency band is required.

The lead running from the 7 ohm resistor to the third bank of the switch, is disconnected at both ends, and the wires cut off short where they enter the wiring loom. The remaining wires on the bandswitch are removed, including the wiping contact going to Pin 9, and joined together and taped. This will have cleared the bank of the bandswitch, and made Pin 9 the d.c. inlet for the relay and motor.

A small 3-30 pF. air trimmer is now connected between Channel 1 position

on the bandswitch, bank 3 and ground, and Channel 2 position, on bank 1 connects to the wiper contact on bank 3. Reference to Fig. 1 will show the reason for this condenser, C10. When the 807 doubler grid is switched from Channel 2 to Channel 1, the capacity of the tube is removed from across L1, and to restore resonance C10 is inserted.

The last alterations necessary are the power amplifier, output circuits.

The loading coil, switches, and fixed condensers, located on and under the insulated panel, alongside the antenna relay, are now removed and any connections from the variable inductances which are disturbed, are connected to their appropriate feed-thru insulators, connecting them with the antenna output bank on the bandswitch. This small area of the sub-chassis can now be used for battery bias for the p.a. if it is not desired to use an external supply, or the area could be used to house the 10 metre antenna change over relay for a rotary beam.

The variometer in the p.a. output circuit is now removed, and the two pillars which supported it from the front panel are used to take a small metal panel, drilled to fit the one hole mounting of the new 10 metre tank condenser. The inductance for this tank L4 is wound of heavy gauge wire, or copper tubing, and is supported from the terminals of the condenser. A single turn link is coupled to the inductance, and taken to a co-axial outlet in any convenient position. The two parasitic chokes in the plate circuit of the 807s

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were found to be resonant on 10 metres, so were replaced with 9 turns of wire, 1/4" diameter. The wire was taken from the loading coil removed previously. With these chokes in position the p.a. was perfectly stable, and without any vices whatsoever, on all bands covered.

To supply correct operating voltages to the 12SK7 doublers, and 807 screen, the screen resistor to the 807 doubler had to be reduced to 2,500 ohms, due to the heavier current flowing.

To prevent excessive voltage being applied to the v.f.o. when operating on Channel 3, it is advisable to insert the 12,000 ohm resistor, removed from the 807 doubler screen, in the h.t. lead to the Channel 3 v.f.o. This resistance is not shown in the schematic drawing.

The final alteration is to replace the r.f. ammeter with a 250 Ma. meter, and connect in the cathode circuit of the p.a. The r.f. meter has too high a range for the normal 300 to 600 ohm lines and it was found much easier to tune and load the transmitter with the plate current meter. In the aircraft installation all tuning is done by plugging an external milliammeter into the p.a.p. and i.p.a.p. jacks on the front panel, which read power amplifier and doubler cathode currents, respectively.

These jacks are handy in our case as they can be used to key the transmitter, if preferred to the relay method.

POWER SUPPLIES Two power supplies are required for the r.f. section. A minor h.t. supply of 450 volts at 150 Ma., connected between Pin 11 and earth or Pin 10 through antenna relay, to supply the v.f.o. and 807 doubler, and a main h.t. supply of 500 volts at 200 Ma. for the power amplifier stage, connected through the modulator transformer to Pin 8. A source of bias is required of about 25-30 volts, which is most easily obtained from a battery. 12 volts a.c. is required for the filaments.

ADJUSTMENT AND TUNING It is essential in adjusting a transmitter of this type to have a sensitive indicating wavemeter. A tuned circuit with a germanium or diode rectifier, and 0-500 microammeter is satisfactory. This must be calibrated, so that the right harmonic of the doubler tanks can be selected, and tuned for maximum output. A 10 Ma. meter is connected between Pin 14 and chassis, to indicate grid current to the p.a. during the first adjustments. Set the bandswitch to Channel 3, and apply minor h.t. The p.a. meter will indicate grid current when the antenna relay is held in the closed position. This relay should now be held closed with a piece of matchstick for all subsequent tests. The v.f.o. is now set to the centre of the 80 metre band, and main h.t. applied with no antenna connected. The final plate current should be about 240 Ma. Set the p.a. loading condenser to about 30 on the dial, and adjust the variable inductance until the plate current dips. The antenna can now be connected, and the inductance varied for dip. Increasing the capacity of the

loading condenser and restoring the p.a. to resonance dip at each step will increase the loading to the antenna. The correct operating current should be about 200 Ma. for Channels 4, 3 and 2, and about 180 Ma. for the 10 metre band. The 10 metre band being loaded by the link in the conventional manner, by adjusting the coupling of the link to its tank coil.

When Channel 3 is operating correctly, main h.t. is removed and the bandswitch set to Channel 4. Minor h.t. is applied and the p.a. grid meter checked for a reading. Adjust the slug, mentioned previously, in the 807 doubler plate tank for maximum p.a. drive. The Channel 4 v.f.o. being set to the middle of the band, the tuning procedure which applied to Channel 3 is carried out. It is important in both cases that the small switches located on the rear of the variable inductances of the appropriate p.a. tanks, be set to the position where the fixed condensers, also located on the inductances, are connected as shown in Fig. 1. Bands 3 and 4 are finally checked with the wavemeter to make sure they are on 80 and 40 metres respectively.

Turn the bandswitch to Channel 2 and apply minor h.t. Couple the wavemeter to L1, and insert a piece of brass rod in the coil, if the indication of resonance on the sensitive wavemeter shows an increase on 40 metres, as the rod is inserted, the inductance is too large, and the turns of the coil must be spread slightly. By this method the doubler is tuned but it must be stressed that a calibrated wavemeter must be used because it is quite easy to tune the doubler to 10.5 Mc. by getting the wrong harmonic. The spacing of the turns on the 807 tank at the rear of Channel 2 can now be varied for maximum grid drive, which should be about 8 Ma. when properly adjusted. The p.a. plate circuits can now be adjusted as previously described, the output being on the 20 metre band.

With the minor h.t. applied and the bandswitch on Channel 1, the doubler in this compartment should now be adjusted. It will be necessary to insert a meter in the grid circuit of this 12SK7 and adjust C10 for maximum drive. The meter is now removed, the wavemeter tuned to 20 metres and coupled to L2. The slug is adjusted for resonance on 20 metres, and if the peak is not obtainable within the range of the slug, the turns on the coil are altered accordingly. Couple the wavemeter to the new inductance (L3) in the 807 doubler plate circuit, located under the chassis, and adjust the slug for resonance on 10 metres, the grid drive to the p.a. should be 5-6 Ma. Main h.t. can now be applied and the p.a. tank condenser tuned to resonance. Swinging the bandswitch through positions 1, 2, 3 and 4 should give outputs on 10, 20, 80 and 40 metres respectively, as indicated on the wavemeter when held near the antenna terminal and the 10 metre coil.

RELAY SUPPLIES The 24 volts required for the motor tuning and antenna relay can be obtained by means of a suitable metal rectifier and step down transformer. 12 volt operation could be obtained for the relays, if the clutch relay and motor connections were re-arranged for parallel operation on the terminal board of the clutch relay coil. The antenna change-over relay would have to be re-wound however. Pin 9 on the power inlet plug is now d.c. input for relays and motor, and antenna relay is keyed between Pin 13 and chassis.

It is hoped to describe the conversion of the modulator unit in a later article.

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VK/ZL INTERNATIONAL DX CONTEST

The New Zealand Association of Radio Transmitters, in conjunction with the Wireless Institute of Australia, has much pleasure in announcing another post-war "first"—the 1948 VK/ZL International DX Contest.

OBJECTS.—For the world to contact all VK and ZL call areas and vice versa.

WHEN.—1201 G.M.T. 1st October to 1159 G.M.T. 3rd October—C.W. operation.

1201 G.M.T. 8th October to 1159 G.M.T. 10th October—Phone operation.

1201 G.M.T. 15th October to 1159 G.M.T. 17th October—C.W. operation.

1201 G.M.T. 22nd October to 1159 G.M.T. 24th October—Phone operation.

DURATION.—(a) For contest purposes, ZL and VK stations will limit their period of operation to any consecutive 24 hours' period on each week-end—i.e. within the times given above.

(b) Stations in other countries may contact ZL and VK stations for contest purposes at any time during the operating periods as defined above.

RULES

1. There shall be three main sections to the contest.

(a) Transmitting C.W.

(b) Transmitting Phone.

(c) Receiving (Phone and C.W.).

2. Contestants may compete in the "open" events (i.e. all band) or on one or more individual bands by submitting a log for each individual band.

3. The contest is open to all licensed transmitting Amateurs and receiving stations in any part of the world. No prior entry need be made. Marine, mobile and expedition stations are not permitted to enter for the contest.

4. C.W. will be used for the first and third week-ends and phone for the second and fourth week-ends. Stations entering for both c.w. and phone sections must submit separate logs for both phone and c.w. (see rule 12).

5. All amateur frequency bands may be used.

6. Only one contact per band per week-end with any one station for committed to operate any station under test purposes is permitted.

7. Only one licensed Amateur is per the owner's call sign. Should two or more operators operate any particular station, each will be considered a competitor and must submit a separate log under his own call sign.

8. Each participant will assign himself a serial number of three figures. When two or more operators work from the one station (rule 7), each will assign himself a different serial number. This serial number must remain unaltered for phone and c.w. contacts.

9. Serial numbers to be exchanged during contest QSOs will be as for the A.R.R.L. DX Contest, i.e. the personal three figure cypher will be preceded by the signal report, making a six figure serial for c.w. and a five figure serial for phone.

10. **SCORING.**—Both the VK/ZL station and the station in the remote locality receive ONE point when a serial number is acknowledged by the station in the remote locality. Each operator adds TWO points more when a serial number to the VK/ZL station is acknowledged.

11. **MULTIPLIERS.**—(a) VK/ZL stations. For each band the multiplier will be the number of countries worked on that band except that for the U.S.A. each call area will be a multiplier. A.R.R.L. countries list will be used.

(b) Other Stations. For each band the multiplier will be the number of VK/ZL districts worked on that band. These are VK2, 3, 4, 5, 6, 7, 9; ZL1, 2, 3, 4.

12. **LOGS.**—(a) Logs must show (in this order) Date, Time (G.M.T.), Band of Operation, Call of Station Worked, Serial Number Sent, Serial Number Received, Points Claimed.

(b) Each new country (or VK/ZL call area) contacted must be underlined in RED ink or pencil.

(c) A separate log must be submitted for each band. For each band a summary must be given showing (a) list of countries (VK/ZL call areas) worked; (b) total number of contacts made on that band; (c) Points claimed for that band.

(d) Summary sheet to show: Call Sign of Station, Name and Address of Operator, Whether Entry is for C.W. or Phone and whether for a single band or all band operation, Total Points Claimed, and finally a declaration that all the contest rules and regulations for Amateur Radio in your particular country have been observed and that the log is correct and true to the best of your belief.

13. The judges reserve the right to disqualify any station for:—

(a) Consistent tone reports under T8;

(b) Continuing key-clicks;

(c) Phone splatter or excessive modulation;

(d) Off frequency operation.

14. The Executive Council of the N.Z.A.R.T. shall be the sole adjudicators and their ruling will be binding in the case of any dispute.

15. Overseas stations should call CQ VK/ZL, and VK/ZL stations should call CQ DX Test.

16. **AWARDS.**—Certificates will be awarded to the station returning the highest score from each participating country (each call area in the U.S.A.). There will be no world winner, VK and ZL awards, etc., will be announced by the W.I.A. and N.Z.A.R.T. respectively.

17. Entries from VK and ZL stations must reach N.Z.A.R.T., P.O. Box 489, Wellington, New Zealand, by 26th November, 1948. Overseas logs should reach that address by 14th January, 1949. Envelopes must be clearly marked "VK/ZL Contest."

RECEIVING CONTEST

1. The rules for the receiving contest are the same as for the transmitting contest, but is open to members of any Short Wave Listeners' Society in the world. No transmitting station is permitted to compete in the receiving contest too.

2. The contest times and logging of stations once in each band per week-end are subject to the same rules as for the transmitting contest.

3. To count for points, the call sign of the station being called, and the strength and tone of the calling station, together with the serial number sent by the calling station, must be entered in the log. Three points will be claimed for each such entry in the log.

4. It is not sufficient to log a station calling CQ Contest.

5. VK receiving stations cannot log any VK stations and ZL receiving stations cannot log any ZL stations—only overseas stations but VKs may log ZLs and vice versa. Overseas stations will enter only VK and ZL stations heard operating in the Contest.

6. The awards for the receiving contest will be similar to those in the transmitting contest.

7. Receiving logs are to be similar to transmitting logs.

QUESTIONS AND ANSWERS

A.3.—From VKANB:—

P Band 225-390 Mc.

L Band 390-1,550 Mc.

S Band 1,550-5,200 Mc.

X Band 5,200-11,000 Mc.

K Band 11,000-33,000 Mc.

but no information on G or I Band. Can anyone help?

NEW QUESTIONS

Q.8.—VK3PW would like to know how and why the constant voltage transformers, advertised on p. 112 of the 1947 A.R.R.L. Handbook, work? In particular he is interested in the 500 v.a. size.

Q.7.—What is the best way to control the gain of an r.f. sharp cut-off tube such as a 6AG5 or 6AK5? Is varying the grid bias satisfactory?

PARASITIC

We regret that an error appeared in the article "BC698 and BC457 Transmitters as v.f.o." in the May issue.

The removal of R70 as instructed will result in no indication from the magic eye at crystal resonance. Correct operation can be restored by substituting for R70, a resistance between the oscillator supply and cathode of the magic eye tube, of suitable value to restore the correct bias to that tube. For m.o. h.t. supply of 105 volts, this resistor can be 25,000 to 30,000 ohms, or proportionally higher, for higher oscillator plate voltages.

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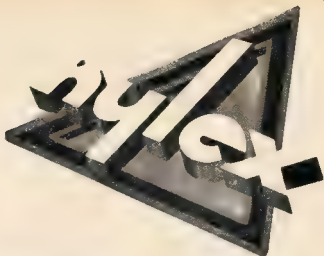
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White	152 "
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RAY JONES (VK3RJ), MANAGER

Amateur Radio, September, 1948

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

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2EH works the DX. Has nice phone. 2IQ and 2.5 KVL 2MI are on 7 Mc. phone Sunday afternoons with solid signals. 2ARR has 7 Mc. phone. He surprises the boys with his recordings of their signals. 2HA is now fully automatic. He has high speed break-in working. 2SV is reported to be on 28 Mc. phone. 2EM is more interested in high quality amplifiers; he has a good signal on 50 Mc. 2ATE has a solid signal on 7 Mc. phone. He gets out well. 2DR is busy keeping the high speed c.w. boys supplied with an extra supply of dots.

ST. GEORGE ZONE

2SH is still getting an occasional new country on 28 Mc. 2GS was heard lately with 2 watts from a No. 11 on 7 Mc., while building the new rig before hopes to J. land. 2DI is still chiding the elusive DX. How many countries now? 2VX, a new comer! Charlie is on 7 Mc. with a No. 11, re-camping ATS for a.c. 2PT is using a Franklin on 7 Mc. c.w. with 14 watts. Frank works interstate for good reports, has under construction three separate finals using 88's. 2ASK has a new rack that would shame a few commercials; has phone, but works only 14 Mc. c.w. 2SV has 70 watts phone and c.w. on 7 and 14 Mc. and is at present building a portable 144 Mc. equipment to work from car.

2ADA is at present building new shack, but finds time for rag chews on 3.5 and 7 Mc. 2AGH is at present on a visit to the UK, and will return home in 60 W. land. 2BV seems to be active on all bands; Rag helps out with frequency and modulation checks. 2AHX is building a new super super, on 14 Mc. c.w., but has phone. 2AJ is also building portable 144 Mc. gear, and now has remote control; works 7 and 14 Mc. 2ADO is happy, having moved to his new home, but is at present inactive. 2Wester if 2AV is happy as 2ADO is now opposite him. Heard at times on 7 and 14 Mc. 2ALT is now on 14 Mc. and has b.c.l. on 7 Mc. 2AJ is still going strong on 14 Mc.

2SV is inactive at moment—new beam under way. 2RE a new Ram, getting out on 14 Mc. phone. 2AIM is on c.w. and alternates 7 and 14 Mc. 2UT and 2ANP operate on 7 and 14 Mc., the latter has a new beam with 16 position selector.

NORTH COAST AND TABLELANDS

2JK using a new mike a JT, been active on 30 with a new antenna and has a c.w. and Coast O. Watermeter in action. 2SH erecting an 8JK for JH and hopes for better results, getting his share of DX. 2YB has been on two months and has a fair signal, uses a 2GI (N.S. Diapole) v.f.o., 6VA 407 and 45 watts, mode, 80% AB1; missed any damage during the floods but plenty of water under the house. 2DI 2XD still conscious, but boy expect static will drive them back to 40 again. 2NY setting things shipshape in the shack after the rain out by the water. 2WO a proud father for the third time; a boy still working plenty of DX. 2AFY has also to be congratulated, a father once again. (Of the record the scribe 2FA is also a proud father, must be something in this North Coast air!)

2ASF can be heard on 40 active from (not in) a hotel, only c.w. as yet. 2DS kept busy getting a mast ready for some loose mounding. Warwick is a 60 MN operator. 2LH did some good work during the flood.

MEIKANTHLE

2WZ and 2AGD, using transmitters on 144 Mc., heard RFI at Wentworth Falls on 8th August, but couldn't make it two-way. The following are on 14 Mc. 2SE 2AGD, 2YV, 2P, and 2AHM, 2PQ, 2AFS and 2TE are building. 2ARA has the distinction of being the first VE to QSO 2AFSAP on 20 phone. The gang would like him on 10. 2OW heard on 30 with new beam, boy keeping tight on local radio club. 2PQ has shack nearly completed and will be free of family QRM, or the family will be free of him, depending on the point of view. 2AFS, Newcastle's most energetic Ham, has stacked 28 and 50 Mc. beams but claims he is always on the wrong band at the right time or vice-versa. Please contact 2PF before the 15th of each month with news.

COALFIELDS AND LAKES ZONE

Little to report from the Lakes and Gosford area. The regular 2OD and 2RIU seem to be kept on 50 Mc. as ever. 2AMU heard on 10. 2EK with his usual punch on 40 phone, no others heard. 2TY 2O with a rotary, works 144 with 2ADK and 2IRV in contact. The Newcastle gang has been heard at 28 by 2ADT. 2JE has 10 and 50 beams and full rig on 144 Mc. 2KQ with a good rig on 50 a new receiver and was 2EK supplies De news from Kurri—2YO not active, his beam in hospital, hope you are OK now George. 2KF is active on 14, 28 and 50 Mc. beam going up on the latter band. No activity from 2XT or 2KX. 2KP working at one of the local colleges, no Ham activity as yet. 2KQ only needs New Hampshire for his 58 Mc. WAS that is on those low poles on 50 Mc. using the famous "bopper" working Newcastle, Toronto and Cusack and VK0! All on two tubes.



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WESTERN AUSTRALIA

The August meeting was held on the 9th of the month, there being 45 members present. Day Secretary—AGW—was away, up in the North-West at the time, so GSW took his position as acting Secretary.

It was with great regret that GWH took the opportunity of the passing of Howard Lewis (VE8KX). Howard was a sympathizer, being a member of the family on behalf of the VK6 Division of the W.I.A.

Rules of the forthcoming VK/EL Contest were read. GRU commented on the Remembrance Day Contest and called for a greater effort on the part of entrants, so that VK6 could win the trophy. Support was readily given and we should know the results by the end of the month.

The Council, at AGW's suggestion, discussed a motion that N.R.F.M. be made available on all bands—particularly 3.5 Mc. in an endeavour to make available to the public the services of the interference. A report will be sent to Federal Examiners for approval and is expected to conform with the report from other Divisions.

AGM made known to the meeting that Bill Bolton (6MD) was being married in a couple of weeks. Bill was given a good hand and helpful advice was readily given to him and his XYL wife's happiness in their future life.

Presentation of W.A.C. and W.I.A. Contest Certificates was made by 6WH to 6WS, 6GF, 6ZF, 6FV and 6KW.

After the rag-session—which is a feature of every meeting—GRW gave a lecture, "My Amateur Station". This was the second of a series. Ron went to considerable trouble to produce diagrams and showed interesting photos of his equipment. It was probably the most expensive amateur station in VK6.

6MF followed up with a very interesting lecture and demonstration of a companion unit he made for his Command Transmitter. The unit contained modulator and power supplies to make up a complete transmitter on the 7 Mc. band. Circuit modifications were explained. The unit was so well made that we were all convinced we believed all is said! The lecture was most appropriate because it was a very timely reminder to the members to have their own Command Transmitters in the very near future. Appreciation was shown in the usual manner for the very interesting lecture. The meeting closed on 10.30 p.m.

PERSONALITIES

Congratulations this month go to 6DJ on the arrival of a second harmonic. This should get you out of washline the dishes now! 6GJ likes the friends these evenings and Mac is devising a means of remote control. This will be the second of the cricket broadcast on it anyway. 6JB says he has put up a 14 Mc. band beam on Europe, in any case a trip to Wairarapa Bay. How's DX Alan? 6JG with 21 watts input has worked ZL with a good report. We worked this ZL later and learned that it was a very nice one-tube job. 6JH says Bob. 6BS had a very unfortunate accident, but some kind of most convincing by putting up some long distance contacts. Always a pleasure to the house over. Thanks for the newsway letter Bob.

6MJ goes mobile with a 20 foot vertical antenna on his car. Mal drive along with his head in the wind for a few days. 6N says he has a 100 watt power may cross over the road. 6RS is formulating ideas to put a signal out on 144 Mc. also a v.f.o. for other bands. 6P. Ron and 6Q. 6R is working on the summer DX contest 1948! 6VB is designing a portable rig to keep him on the air so that he can build up a new receiver. Frank's rig will then be on all bands in a time! 6S is having a spell in hospital. Hope you are out of it by the time you read this Bill. Did you do any good on 18 Mc. last night about 6T. 6U is a new Day Secretary Dave Cost. What's the betting that Jim is one of the top seven?

6GJ took a nasty "kick" from the rig which he caught in a grab screw which holds the insulation alone on a meter plug. Old it was not any more than that sore finger. Horrie, and 6H says he has a 100 watt power. 6I is having a spell in hospital. Hope you are out of it by the time you read this Bill. Did you do any good on 18 Mc. last night about 6T. 6U is a new Day Secretary Dave Cost. What's the betting that Jim is one of the top seven?

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appreciated Mal—there should be more of it. 6PC is trying hard to put out a signal on 144 Mc. Drive is Frank's problem and he is also talking about a new rig. 6QZ often heard on 7 Mc. Harry is gradually getting things sorted out. 6ZG, at Kustanning, used to hear him on 7 Mc. regularly. What's all the news from down there Charlie? What about 6XJ also? 6MB is doing the right thing and taking unto himself a XYL. Nice work Bill, and very 73 from all VK6.

TASMANIA

NORTHERN ZONE

At long last it can be announced that we now have an active Northern Zone. Mr. Len Crooks (7BD) was unanimously voted into the chair as the new Zone Secretary. Len has been associated with Amateur Radio longer than I can remember, however some idea of the time can be gauged by the fact that he has been a member of the NZEA since 1924. He commented on the fact that he had a photo of 7BQ with his receiver, built on glass plate, that Len had won a prize in 1927. Len is also a Vice-President of the W.I.A. Tasmanian Division and has been associated with every amateur organization since the formation of the club. With this experience Len was certainly the best choice for this position. Mr. Noel Lijacomb (7AL) offered his services as our Temporary Secretary and was unanimously voted the office. He will be up to the zone members to make a success of the zone.

We are very fortunate here in Tasmania to have such an excellent President, Secretary and Council in this Division and with their help and harmony it is no wonder that practically all the Amateurs on the Island are members of the W.I.A. This month we were Mr. Bill Tasmanian (7YB) to the Institute and in the Launceston district we now require only one more member to attain the possible.

Although we are few in number, Amateurs in the Zone are easily divided into three divisions. First are the big boys, who are 7BD, 7BQ and 7YE. The activity of these men I cannot find out I am not in the iron ring, nor have they any more to say about it. Next are the DX men, namely 7BE, 7BQ and 7LE. The doings of these three for the last couple of months on the air have been very interesting to all three are wearing faces as long as the "new look". Last, but not least, are the phone men 7BQ, 7BD, 7BQ and 7YE. These three are very active and it appears to be the most active and can be heard nicely describing the vicissitudes of the Tasmanian winter.

Although a little out of the zone they are nevertheless VKs so it would not be out of order to say that we would like to hear from the Macquarie Island gang. Who wouldn't anyway?

FIFTY AND UP

6BD and 4LN were heard testing with 4BE the other night. Has the v.f.o. bug bitten you too Jim? Believe 4LN has converted his D1105 to the 7 Mc. band; what a marvel! 4CU has his DB105 on 7 Mc. Charlie's new rig is on 5 Mc. Job is as his new super receiver for this band. 6XD and 6JD of Townsville working cross towns and latest news is that 6JH is working on a 100 watt rig for 80 Mc. Nice work fellows and hope to hear you down here this summer.

144 Mc. DIGEST by W. J. Hartley
Ideal conditions prevailed for the second 144 Mc. field day held on Sunday, 8th August, in VK6, but, despite the fact that there were only two mobile units on the road, activity was mostly confined to local city contacts. Unfortunately several stations were unable to participate due to petrol restrictions and to re-building. No new records were established, however 3ABA-4YS made contact with 4YB and 4YD by phone from a 700 foot hill located north of Diamond Creek, then 3MD, 3ACM, 3BD, 3AF, 3HE and 3VF of Deynaburgh. 3YB and 3YD were contacted through Oliver's KJL at Sanjank worked through to 3ED, 3AJ and 3ACM. Nothing was heard of 3YB or 3JW or the M. Giamber boys 3JA and 3MS.

It is hoped that for the next 144 Mc. field day, to be held on October 19, that there will be at least six portable units out together with country links.

Information is to hand from the N.S.W. V.H.F. Office (VK6NT) that the 288 Mc. band is very active. The top of the list is 3ABY, 3YB, 3YD, 3YF, 3YI and 3YK, the last two have set up a 70 mile record by working each other from Mt. Gibraltar, near Bowral, to French's Forest.

with strength 6 signals both ways. Gear used on this band are super-range receivers and mod. con. 3ABY and 3NO are working 1700 micro-pipe with 3ABY power. 3YB has in use the following: a 637 and a 6V6, hitched to a five element quarter wave spaced and a 955 super-range. The Gladstone Radio Club has in use the following: a 637 and a 6V6, hitched to a five element quarter wave spaced and a 955 super-range. The Gladstone Radio Club has in use the following: a 637 and a 6V6, hitched to a five element quarter wave spaced and a 955 super-range.

For the last month the following stations were active in VK6 on 144 Mc. band: 3ACM, 3ABA, 3ABY, 3BD, 3BE, 3BF, 3BG, 3BH, 3BI, 3BJ, 3BK, 3BL, 3BM, 3BN, 3BO, 3BP, 3BQ, 3BR, 3BS, 3BT, 3BU, 3BV, 3BW, 3BX, 3BY, 3BZ, 3CA, 3CB, 3CC, 3CD, 3CE, 3CF, 3CG, 3CH, 3CI, 3CJ, 3CK, 3CL, 3CM, 3CN, 3CO, 3CP, 3CQ, 3CR, 3CS, 3CT, 3CU, 3CV, 3CW, 3CX, 3CY, 3CZ, 3DA, 3DB, 3DC, 3DD, 3DE, 3DF, 3DG, 3DH, 3DI, 3DJ, 3DK, 3DL, 3DM, 3DN, 3DO, 3DP, 3DQ, 3DR, 3DS, 3DT, 3DU, 3DV, 3DW, 3DX, 3DY, 3DZ, 3EA, 3EB, 3EC, 3ED, 3EE, 3EF, 3EG, 3EH, 3EI, 3EJ, 3EK, 3EL, 3EM, 3EN, 3EO, 3EP, 3EQ, 3ER, 3ES, 3ET, 3EU, 3EV, 3EW, 3EX, 3EY, 3EZ, 3FA, 3FB, 3FC, 3FD, 3FE, 3FF, 3FG, 3FH, 3FI, 3FJ, 3FK, 3FL, 3FM, 3FN, 3FO, 3FP, 3FQ, 3FR, 3FS, 3FT, 3FU, 3FV, 3FW, 3FX, 3FY, 3FZ, 3GA, 3GB, 3GC, 3GD, 3GE, 3GF, 3GG, 3GH, 3GI, 3GJ, 3GK, 3GL, 3GM, 3GN, 3GO, 3GP, 3GQ, 3GR, 3GS, 3GT, 3GU, 3GV, 3GW, 3GX, 3GY, 3GZ, 3HA, 3HB, 3HC, 3HD, 3HE, 3HF, 3HG, 3HH, 3HI, 3HJ, 3HK, 3HL, 3HM, 3HN, 3HO, 3HP, 3HQ, 3HR, 3HS, 3HT, 3HU, 3HV, 3HW, 3HX, 3HY, 3HZ, 3IA, 3IB, 3IC, 3ID, 3IE, 3IF, 3IG, 3IH, 3II, 3IJ, 3IK, 3IL, 3IM, 3IN, 3IO, 3IP, 3IQ, 3IR, 3IS, 3IT, 3IU, 3IV, 3IW, 3IX, 3IY, 3IZ, 3JA, 3JB, 3JC, 3JD, 3JE, 3JF, 3JG, 3JH, 3JI, 3JJ, 3JK, 3JL, 3JM, 3JN, 3JO, 3JP, 3JQ, 3JR, 3JS, 3JT, 3JU, 3JV, 3JW, 3JX, 3JY, 3JZ, 3KA, 3KB, 3KC, 3KD, 3KE, 3KF, 3KG, 3KH, 3KI, 3KJ, 3KK, 3KL, 3KM, 3KN, 3KO, 3KP, 3KQ, 3KR, 3KS, 3KT, 3KU, 3KV, 3KW, 3KX, 3KY, 3KZ, 3LA, 3LB, 3LC, 3LD, 3LE, 3LF, 3LG, 3LH, 3LI, 3LJ, 3LK, 3LL, 3LM, 3LN, 3LO, 3LP, 3LQ, 3LR, 3LS, 3LT, 3LU, 3LV, 3LW, 3LX, 3LY, 3LZ, 3MA, 3MB, 3MC, 3MD, 3ME, 3MF, 3MG, 3MH, 3MI, 3MJ, 3MK, 3ML, 3MN, 3MO, 3MP, 3MQ, 3MR, 3MS, 3MT, 3MU, 3MV, 3MW, 3MX, 3MY, 3MZ, 3NA, 3NB, 3NC, 3ND, 3NE, 3NF, 3NG, 3NH, 3NI, 3NJ, 3NK, 3NL, 3NM, 3NN, 3NO, 3NP, 3NQ, 3NR, 3NS, 3NT, 3NU, 3NV, 3NW, 3NX, 3NY, 3NZ, 3OA, 3OB, 3OC, 3OD, 3OE, 3OF, 3OG, 3OH, 3OI, 3OJ, 3OK, 3OL, 3OM, 3ON, 3OO, 3OP, 3OQ, 3OR, 3OS, 3OT, 3OU, 3OV, 3OW, 3OX, 3OY, 3OZ, 3PA, 3PB, 3PC, 3PD, 3PE, 3PF, 3PG, 3PH, 3PI, 3PJ, 3PK, 3PL, 3PM, 3PN, 3PO, 3PP, 3PQ, 3PR, 3PS, 3PT, 3PU, 3PV, 3PW, 3PX, 3PY, 3PZ, 3QA, 3QB, 3QC, 3QD, 3QE, 3QF, 3QG, 3QH, 3QI, 3QJ, 3QK, 3QL, 3QM, 3QN, 3QO, 3QP, 3QQ, 3QR, 3QS, 3QT, 3QU, 3QV, 3QW, 3QX, 3QY, 3QZ, 3RA, 3RB, 3RC, 3RD, 3RE, 3RF, 3RG, 3RH, 3RI, 3RJ, 3RK, 3RL, 3RM, 3RN, 3RO, 3RP, 3RQ, 3RR, 3RS, 3RT, 3RU, 3RV, 3RW, 3RX, 3RY, 3RZ, 3SA, 3SB, 3SC, 3SD, 3SE, 3SF, 3SG, 3SH, 3SI, 3SJ, 3SK, 3SL, 3SM, 3SN, 3SO, 3SP, 3SQ, 3SR, 3SS, 3ST, 3SU, 3SV, 3SW, 3SX, 3SY, 3SZ, 3TA, 3TB, 3TC, 3TD, 3TE, 3TF, 3TG, 3TH, 3TI, 3TJ, 3TK, 3TL, 3TM, 3TN, 3TO, 3TP, 3TQ, 3TR, 3TS, 3TT, 3TU, 3TV, 3TW, 3TX, 3TY, 3TZ, 3UA, 3UB, 3UC, 3UD, 3UE, 3UF, 3UG, 3UH, 3UI, 3UJ, 3UK, 3UL, 3UM, 3UN, 3UO, 3UP, 3UQ, 3UR, 3US, 3UT, 3UU, 3UV, 3UW, 3UX, 3UY, 3UZ, 3VA, 3VB, 3VC, 3VD, 3VE, 3VF, 3VG, 3VH, 3VI, 3VJ, 3VK, 3VL, 3VM, 3VN, 3VO, 3VP, 3VQ, 3VR, 3VS, 3VT, 3VU, 3VV, 3VW, 3VX, 3VY, 3VZ, 3WA, 3WB, 3WC, 3WD, 3WE, 3WF, 3WG, 3WH, 3WI, 3WJ, 3WK, 3WL, 3WM, 3WN, 3WO, 3WP, 3WQ, 3WR, 3WS, 3WT, 3WU, 3WV, 3WW, 3WX, 3WY, 3WZ, 3XA, 3XB, 3XC, 3XD, 3XE, 3XF, 3XG, 3XH, 3XI, 3XJ, 3XK, 3XL, 3XM, 3XN, 3XO, 3XP, 3XQ, 3XR, 3XS, 3XT, 3XU, 3XV, 3XW, 3XX, 3XY, 3XZ, 3YA, 3YB, 3YC, 3YD, 3YE, 3YF, 3YG, 3YH, 3YI, 3YJ, 3YK, 3YL, 3YM, 3YN, 3YO, 3YP, 3YQ, 3YR, 3YS, 3YT, 3YU, 3YV, 3YW, 3YX, 3YY, 3YZ, 3ZA, 3ZB, 3ZC, 3ZD, 3ZE, 3ZF, 3ZG, 3ZH, 3ZI, 3ZJ, 3ZK, 3ZL, 3ZM, 3ZN, 3ZO, 3ZP, 3ZQ, 3ZR, 3ZS, 3ZT, 3ZU, 3ZV, 3ZW, 3ZX, 3ZY, 3ZZ, 3AA, 3AB, 3AC, 3AD, 3AE, 3AF, 3AG, 3AH, 3AI, 3AJ, 3AK, 3AL, 3AM, 3AN, 3AO, 3AP, 3AQ, 3AR, 3AS, 3AT, 3AU, 3AV, 3AW, 3AX, 3AY, 3AZ, 3BA, 3BB, 3BC, 3BD, 3BE, 3BF, 3BG, 3BH, 3BI, 3BJ, 3BK, 3BL, 3BM, 3BN, 3BO, 3BP, 3BQ, 3BR, 3BS, 3BT, 3BU, 3BV, 3BW, 3BX, 3BY, 3BZ, 3CA, 3CB, 3CC, 3CD, 3CE, 3CF, 3CG, 3CH, 3CI, 3CJ, 3CK, 3CL, 3CM, 3CN, 3CO, 3CP, 3CQ, 3CR, 3CS, 3CT, 3CU, 3CV, 3CW, 3CX, 3CY, 3CZ, 3DA, 3DB, 3DC, 3DD, 3DE, 3DF, 3DG, 3DH, 3DI, 3DJ, 3DK, 3DL, 3DM, 3DN, 3DO, 3DP, 3DQ, 3DR, 3DS, 3DT, 3DU, 3DV, 3DW, 3DX, 3DY, 3DZ, 3EA, 3EB, 3EC, 3ED, 3EE, 3EF, 3EG, 3EH, 3EI, 3EJ, 3EK, 3EL, 3EM, 3EN, 3EO, 3EP, 3EQ, 3ER, 3ES, 3ET, 3EU, 3EV, 3EW, 3EX, 3EY, 3EZ, 3FA, 3FB, 3FC, 3FD, 3FE, 3FF, 3FG, 3FH, 3FI, 3FJ, 3FK, 3FL, 3FM, 3FN, 3FO, 3FP, 3FQ, 3FR, 3FS, 3FT, 3FU, 3FV, 3FW, 3FX, 3FY, 3FZ, 3GA, 3GB, 3GC, 3GD, 3GE, 3GF, 3GG, 3GH, 3GI, 3GJ, 3GK, 3GL, 3GM, 3GN, 3GO, 3GP, 3GQ, 3GR, 3GS, 3GT, 3GU, 3GV, 3GW, 3GX, 3GY, 3GZ, 3HA, 3HB, 3HC, 3HD, 3HE, 3HF, 3HG, 3HH, 3HI, 3HJ, 3HK, 3HL, 3HM, 3HN, 3HO, 3HP, 3HQ, 3HR, 3HS, 3HT, 3HU, 3HV, 3HW, 3HX, 3HY, 3HZ, 3IA, 3IB, 3IC, 3ID, 3IE, 3IF, 3IG, 3IH, 3II, 3IJ, 3IK, 3IL, 3IM, 3IN, 3IO, 3IP, 3IQ, 3IR, 3IS, 3IT, 3IU, 3IV, 3IW, 3IX, 3IY, 3IZ, 3JA, 3JB, 3JC, 3JD, 3JE, 3JF, 3JG, 3JH, 3JI, 3JJ, 3JK, 3JL, 3JM, 3JN, 3JO, 3JP, 3JQ, 3JR, 3JS, 3JT, 3JU, 3JV, 3JW, 3JX, 3JY, 3JZ, 3KA, 3KB, 3KC, 3KD, 3KE, 3KF, 3KG, 3KH, 3KI, 3KJ, 3KK, 3KL, 3KM, 3KN, 3KO, 3KP, 3KQ, 3KR, 3KS, 3KT, 3KU, 3KV, 3KW, 3KX, 3KY, 3KZ, 3LA, 3LB, 3LC, 3LD, 3LE, 3LF, 3LG, 3LH, 3LI, 3LJ, 3LK, 3LL, 3LM, 3LN, 3LO, 3LP, 3LQ, 3LR, 3LS, 3LT, 3LU, 3LV, 3LW, 3LX, 3LY, 3LZ, 3MA, 3MB, 3MC, 3MD, 3ME, 3MF, 3MG, 3MH, 3MI, 3MJ, 3MK, 3ML, 3MN, 3MO, 3MP, 3MQ, 3MR, 3MS, 3MT, 3MU, 3MV, 3MW, 3MX, 3MY, 3MZ, 3NA, 3NB, 3NC, 3ND, 3NE, 3NF, 3NG, 3NH, 3NI, 3NJ, 3NK, 3NL, 3NM, 3NN, 3NO, 3NP, 3NQ, 3NR, 3NS, 3NT, 3NU, 3NV, 3NW, 3NX, 3NY, 3NZ, 3OA, 3OB, 3OC, 3OD, 3OE, 3OF, 3OG, 3OH, 3OI, 3OJ, 3OK, 3OL, 3OM, 3ON, 3OO, 3OP, 3OQ, 3OR, 3OS, 3OT, 3OU, 3OV, 3OW, 3OX, 3OY, 3OZ, 3PA, 3PB, 3PC, 3PD, 3PE, 3PF, 3PG, 3PH, 3PI, 3PJ, 3PK, 3PL, 3PM, 3PN, 3PO, 3PP, 3PQ, 3PR, 3PS, 3PT, 3PU, 3PV, 3PW, 3PX, 3PY, 3PZ, 3QA, 3QB, 3QC, 3QD, 3QE, 3QF, 3QG, 3QH, 3QI, 3QJ, 3QK, 3QL, 3QM, 3QN, 3QO, 3QP, 3QQ, 3QR, 3QS, 3QT, 3QU, 3QV, 3QW, 3QX, 3QY, 3QZ, 3RA, 3RB, 3RC, 3RD, 3RE, 3RF, 3RG, 3RH, 3RI, 3RJ, 3RK, 3RL, 3RM, 3RN, 3RO, 3RP, 3RQ, 3RR, 3RS, 3RT, 3RU, 3RV, 3RW, 3RX, 3RY, 3RZ, 3SA, 3SB, 3SC, 3SD, 3SE, 3SF, 3SG, 3SH, 3SI, 3SJ, 3SK, 3SL, 3SM, 3SN, 3SO, 3SP, 3SQ, 3SR, 3SS, 3ST, 3SU, 3SV, 3SW, 3SX, 3SY, 3SZ, 3TA, 3TB, 3TC, 3TD, 3TE, 3TF, 3TG, 3TH, 3TI, 3TJ, 3TK, 3TL, 3TM, 3TN, 3TO, 3TP, 3TQ, 3TR, 3TS, 3TT, 3TU, 3TV, 3TW, 3TX, 3TY, 3TZ, 3UA, 3UB, 3UC, 3UD, 3UE, 3UF, 3UG, 3UH, 3UI, 3UJ, 3UK, 3UL, 3UM, 3UN, 3UO, 3UP, 3UQ, 3UR, 3US, 3UT, 3UU, 3UV, 3UW, 3UX, 3UY, 3UZ, 3VA, 3VB, 3VC, 3VD, 3VE, 3VF, 3VG, 3VH, 3VI, 3VJ, 3VK, 3VL, 3VM, 3VN, 3VO, 3VP, 3VQ, 3VR, 3VS, 3VT, 3VU, 3VV, 3VW, 3VX, 3VY, 3VZ, 3WA, 3WB, 3WC, 3WD, 3WE, 3WF, 3WG, 3WH, 3WI, 3WJ, 3WK, 3WL, 3WM, 3WN, 3WO, 3WP, 3WQ, 3WR, 3WS, 3WT, 3WU, 3WV, 3WX, 3WY, 3WZ, 3XA, 3XB, 3XC, 3XD, 3XE, 3XF, 3XG, 3XH, 3XI, 3XJ, 3XK, 3XL, 3XM, 3XN, 3XO, 3XP, 3XQ, 3XR, 3XS, 3XT, 3XU, 3XV, 3XW, 3XX, 3XY, 3XZ, 3YA, 3YB, 3YC, 3YD, 3YE, 3YF, 3YG, 3YH, 3YI, 3YJ, 3YK, 3YL, 3YM, 3YN, 3YO, 3YP, 3YQ, 3YR, 3YS, 3YT, 3YU, 3YV, 3YW, 3YX, 3YZ, 3ZA, 3ZB, 3ZC, 3ZD, 3ZE, 3ZF, 3ZG, 3ZH, 3ZI, 3ZJ, 3ZK, 3ZL, 3ZM, 3ZN, 3ZO, 3ZP, 3ZQ, 3ZR, 3ZS, 3ZT, 3ZU, 3ZV, 3ZW, 3ZX, 3ZY, 3ZZ, 3AA, 3AB, 3AC, 3AD, 3AE, 3AF, 3AG, 3AH, 3AI, 3AJ, 3AK, 3AL, 3AM, 3AN, 3AO, 3AP, 3AQ, 3AR, 3AS, 3AT, 3AU, 3AV, 3AW, 3AX, 3AY, 3AZ, 3BA, 3BB, 3BC, 3BD, 3BE, 3BF, 3BG, 3BH, 3BI, 3BJ, 3BK, 3BL, 3BM, 3BN, 3BO, 3BP, 3BQ, 3BR, 3BS, 3BT, 3BU, 3BV, 3BW, 3BX, 3BY, 3BZ, 3CA, 3CB, 3CC, 3CD, 3CE, 3CF, 3CG, 3CH, 3CI, 3CJ, 3CK, 3CL, 3CM, 3CN, 3CO, 3CP, 3CQ, 3CR, 3CS, 3CT, 3CU, 3CV, 3CW, 3CX, 3CY, 3CZ, 3DA, 3DB, 3DC, 3DD, 3DE, 3DF, 3DG, 3DH, 3DI, 3DJ, 3DK, 3DL, 3DM, 3DN, 3DO, 3DP, 3DQ, 3DR, 3DS, 3DT, 3DU, 3DV, 3DW, 3DX, 3DY, 3DZ, 3EA, 3EB, 3EC, 3ED, 3EE, 3EF, 3EG, 3EH, 3EI, 3EJ, 3EK, 3EL, 3EM, 3EN, 3EO, 3EP, 3EQ, 3ER, 3ES, 3ET, 3EU, 3EV, 3EW, 3EX, 3EY, 3EZ, 3FA, 3FB, 3FC, 3FD, 3FE, 3FF, 3FG, 3FH, 3FI, 3FJ, 3FK, 3FL, 3FM, 3FN, 3FO, 3FP, 3FQ, 3FR, 3FS, 3FT, 3FU, 3FV, 3FW, 3FX, 3FY, 3FZ, 3GA, 3GB, 3GC, 3GD, 3GE, 3GF, 3GG, 3GH, 3GI, 3GJ, 3GK, 3GL, 3GM, 3GN, 3GO, 3GP, 3GQ, 3GR, 3GS, 3GT, 3GU, 3GV, 3GW, 3GX, 3GY, 3GZ, 3HA, 3HB, 3HC, 3HD, 3HE, 3HF, 3HG, 3HH, 3HI, 3HJ, 3HK, 3HL, 3HM, 3HN, 3HO, 3HP, 3HQ, 3HR, 3HS, 3HT, 3HU, 3HV, 3HW, 3HX, 3HY, 3HZ, 3IA, 3IB, 3IC, 3ID, 3IE, 3IF, 3IG, 3IH, 3II, 3IJ, 3IK, 3IL, 3IM, 3IN, 3IO, 3IP, 3IQ, 3IR, 3IS, 3IT, 3IU, 3IV, 3IW, 3IX, 3IY, 3IZ, 3JA, 3JB, 3JC, 3JD, 3JE, 3JF, 3JG, 3JH, 3JI, 3JJ, 3JK, 3JL, 3JM, 3JN, 3JO, 3JP, 3JQ, 3JR, 3JS, 3JT, 3JU, 3JV, 3JW, 3JX, 3JY, 3JZ, 3KA, 3KB, 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3RV, 3RW, 3RX, 3RY, 3RZ, 3SA, 3SB, 3SC, 3SD, 3SE, 3SF, 3SG, 3SH, 3SI, 3SJ, 3SK, 3SL, 3SM, 3SN, 3SO, 3SP, 3SQ, 3SR, 3SS, 3ST, 3SU, 3SV, 3SW, 3SX, 3SY, 3SZ, 3TA, 3TB, 3TC, 3TD, 3TE, 3TF, 3TG, 3TH, 3TI, 3TJ, 3TK, 3TL, 3TM, 3TN, 3TO, 3TP, 3TQ, 3TR, 3TS, 3TT, 3TU, 3TV, 3TW, 3TX, 3TY, 3TZ, 3UA, 3UB, 3UC, 3UD, 3UE, 3UF, 3UG, 3UH, 3UI, 3UJ, 3UK, 3UL, 3UM, 3UN, 3UO, 3UP, 3UQ, 3UR, 3US, 3UT, 3UU, 3UV, 3UW, 3UX, 3UY, 3UZ, 3VA, 3VB, 3VC, 3VD, 3VE, 3VF, 3VG, 3VH, 3VI, 3VJ, 3VK, 3VL, 3VM, 3VN, 3VO, 3VP, 3VQ, 3VR, 3VS, 3VT, 3VU, 3VV, 3VW, 3VX, 3VY, 3VZ, 3WA, 3WB, 3WC, 3WD, 3WE, 3WF, 3WG, 3WH, 3WI, 3WJ, 3WK, 3WL, 3WM, 3WN, 3WO, 3WP, 3WQ, 3WR, 3WS, 3WT, 3WU, 3WV, 3WX, 3WY, 3WZ, 3XA, 3XB, 3XC, 3XD, 3XE, 3XF, 3XG, 3XH, 3XI, 3XJ, 3XK, 3XL, 3XM, 3XN, 3XO, 3XP, 3XQ, 3XR, 3XS, 3XT, 3XU, 3XV, 3XW, 3XX, 3XY, 3XZ, 3YA, 3YB, 3YC, 3YD, 3YE, 3YF, 3YG, 3YH, 3YI, 3YJ, 3YK, 3YL, 3YM, 3YN, 3YO, 3YP, 3YQ, 3YR, 3YS, 3YT, 3YU, 3YV, 3YW, 3YX, 3YZ, 3ZA, 3ZB, 3ZC, 3ZD, 3ZE, 3ZF, 3ZG, 3ZH, 3ZI, 3ZJ, 3ZK, 3ZL, 3ZM, 3ZN, 3ZO, 3ZP, 3ZQ, 3ZR, 3ZS, 3ZT, 3ZU, 3ZV, 3ZW, 3ZX, 3ZY, 3ZZ, 3AA, 3AB, 3AC, 3AD, 3AE, 3AF, 3AG, 3AH, 3AI, 3AJ, 3AK, 3AL, 3AM, 3AN, 3AO, 3AP, 3AQ, 3AR, 3AS, 3AT, 3AU, 3AV, 3AW, 3AX, 3AY, 3AZ, 3BA, 3BB, 3BC, 3BD, 3BE, 3BF, 3BG, 3BH, 3BI, 3BJ, 3BK, 3BL, 3BM, 3BN, 3BO, 3BP, 3BQ, 3BR, 3BS, 3BT, 3BU, 3BV, 3BW, 3BX, 3BY, 3BZ, 3CA, 3CB, 3CC, 3CD, 3CE, 3CF, 3CG, 3CH, 3CI, 3CJ, 3CK, 3CL, 3CM, 3CN, 3CO, 3CP, 3CQ, 3CR, 3CS, 3CT, 3CU, 3CV, 3CW, 3CX, 3CY, 3CZ, 3DA, 3DB, 3DC, 3DD, 3DE, 3DF, 3DG, 3DH, 3DI, 3DJ, 3DK, 3DL, 3DM, 3DN, 3DO, 3DP, 3DQ, 3DR, 3DS, 3DT, 3DU, 3DV, 3DW, 3DX, 3DY, 3DZ, 3EA, 3EB, 3EC, 3ED, 3EE, 3EF, 3EG, 3EH, 3EI, 3EJ, 3EK, 3EL, 3EM, 3EN, 3EO, 3EP, 3EQ, 3ER, 3ES, 3ET, 3EU, 3EV, 3EW, 3EX, 3EY, 3EZ, 3FA, 3FB, 3FC, 3FD, 3FE, 3FF, 3FG, 3FH, 3FI,

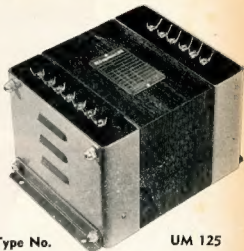
RED LINE Professional Equipment for the Amateur

RED LINE Modulation Transformers

are designed to fit in closely with the requirements of the amateur experimenter concerned mainly with the transmission of speech frequencies 200 cps. to 4 Kc/s. However, close coupling of coils to minimise power losses in Class B circuits call for a type of construction with inter-leaved coils that makes the useful frequency range from 100 cps. to 7 Kc/s.

They are universal types with a wide range of primary and secondary impedances suitable for nearly all valve combinations, and their general construction and the use of 'UI' type mountings gives a particularly handsome and professional appearance. In all cases, adjustments are made on an incremental inductance bridge to maintain close control on gap ratio so that the designed inductance is obtained for the stated secondary DC current.

Primary 8000—4500—5000 ohms . . . CT Rating: 125 Watts
Audio Speech. Sec : 8000—7000—6000—5000—4000 ohms.
Unbalanced Secondary DC 200 mA. Base 5" x 5 1/2" x 4 1/4" 14
Weight: 17 lbs. Mntg: UI 15 "5" la 2"



Type No.

UM 125

Modulation Transformer

Red Line Equipment for 807 Class B Triodes

as described in Amateur Radio for August, 1948, as available against special order.

POWER TRANSFORMERS: 880/880v tapped 710/710v at 350 mA (specially designed for close regulation Class B service).

CHOKES: Input Choke — 20/5 henries at 350 mA Low D.C. resistance.
Smoothing Choke — 10 henries at 350 mA Low D.C. resistance.

FILAMENT TRANSFORMERS: 2.5 v 10 a; 6.3v 4A; 6.3v 4A; 5v 6A (or as required).

DRIVER TRANSFORMER: Ratio 1: 1.4 (up) — whole prim. to 1/2 sec. Gap adjusted for operation either with pp 2A3s or single input with 75 mills unbalanced D.C.

OUTPUT TRANSFORMER: Class B 807s push pull 120 watts rating Prim. 6650 ohms plate to plate line as required.

MODULATION TRANSFORMER: Type UM125 universal with multi-tapped primary and secondary impedances as above.

RED LINE EQUIPMENT PTY. LTD.

INCORPORATING SWALES & SWANN

Workshops:
2 Coates Lane, Melbourne.
Cent. 4773.
City Office:
157 Elizabeth St., Melbourne
MU 6895 (3 lines)



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Facts

Features

Acclaimed in England as the finest "HAM" Set yet designed, the Eddystone 640, when tested under actual working conditions, proved itself the outstanding receiver of its type. Below we give you some extracts from but a few of the numerous congratulatory letters received by the makers of the 640—

- If proved it to be a most remarkable receiver and you are to be congratulated on this achievement such an outstanding "Ham" set. We wish you every success in this producing such an outstanding "Ham" set.
- Having fully tested the model "640" it fully comes up to the standards required for a Communications receiver of this nature, especially on the "Ham" bands we were able to separate stations working almost on top of each other.
- The signal to noise ratio is extremely good and we have great hopes for this set during the coming season.
- The "640" was tried out over the week-end by our Mr. W. and J.B., an ex-Merchant Navy Radio Officer of some ten years' experience. The latter was delighted with this receiver's sharp and easy operation, selectivity and easy control with two highly rated U.S.A. 6X4 tubes. The appearance is really a fine model.
- The "640" was compared with a given signal general with two more favourably with "640" compared more in either case and in fact was much lower in either case and the measured carriers are really a fine set.
- The "640" The appearance is really a fine set and altogether we feel that if this set was exported, even to the U.S.A. it would be a good thing and that the goods without a lot of unnecessary trimmings and yet efficient and exciting standards.

EDDYSTONE AMATEUR BANDS COMMUNICATIONS RECEIVER MODEL

640



NOW AVAILABLE!
B.T.H. Germanium
Crystal Rectifiers

Have you called for your copy of the FREE global wave band map yet? If not, don't delay . . . they're in great demand!

1. Designed primarily for Amateur Communication purposes, tuning range from 31 Mc/s to 1.7 Mc/s.
2. Operates from Standard AC Mains with inputs of 110 volts 200/240 volts, 40/60 cycles as well as from a 6 volt battery by the use of a separate vibrator unit.
3. Includes all valves, the "640" is a 9-2nd stage, detector-AVC-1st audio, rectifier.
4. INPUT IMPEDANCE—400 ohms.
5. TUNING RANGE—
 - (1) 31 to 12.5 Mc/s
 - (2) 12.5 to 5 Mc/s
 - (3) 5 to 1.7 Mc/s.
6. TUNING. An electrical band-spread wheel control is used for this purpose. Fly-spread condenser utilised on the band-clearly marked with all amateur bands, and is so arranged to enable bands, re-setting to a spot frequency, accurate.
7. I.F. FREQUENCY—1600 Kc/s.
8. CRYSTAL FILTER is vacuum mounted to provide a high degree of stability.
9. Sensitivity is better than 2 microvolts in-calls 3.5 watts.
10. OUTPUT. Audio frequency output exceeds 3.5 watts.
11. "5" METER. A socket is provided for and external "5" Meter.

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